The IUCN Red List of Threatened Species™ 2016-3

feedback

Notropis girardi

Scope: Global
Language: English
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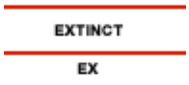

Taxonomy [top]

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae

Scientific Name: Notropis girardi
Species Authority: Hubbs & Ortenburger, 1929
Common Name(s):
English–Arkansas River Shiner

Assessment Information [top]

Red List Category & Criteria: Vulnerable B1ab(ii,iii,v)+2ab(ii,iii,v); D2 ver 3.1
Year Published: 2013
Date Assessed: 2012-04-13
Assessor(s): NatureServe
Reviewer(s): Smith, K. & Darwall, W.R.T.
Facilitator/Compiler(s): Hammerson, G.A. & Ormes, M.
Justification:
This species is listed as Vulnerable because (excluding the introduced population in the Pecos River) its extent of occurrence is less than 20,000 sq km, area of occupancy is less than 2,000 sq km, number of locations is not more than 10 and may be regarded as three, and distribution/abundance/habitat quantity-quality are subject to ongoing declines.

Geographic Range [top]

Range Description: Historically this shiner was widespread and abundant throughout the western portions of the Arkansas River basin in Kansas, New Mexico, Oklahoma, and Texas (there is an old record from western Arkansas). It is extirpated from the Arkansas River in Kansas and Oklahoma. A small remnant population may persist in the Cimarron River (Oklahoma-Kansas) and possibly in the North Canadian (Beaver) River; populations persist in two restricted segments of the Canadian (South Canadian) River (Bestgen *et al*. 1989; USFWS, Federal Register, 3 August 1994). Recently, the species was almost entirely confined to about 820 km of the Canadian River in Oklahoma, Texas, and New Mexico (USFWS 1998), but it has been introduced and is now widely established in Pecos River, New Mexico (Bestgen *et al*. 1989). A single individual found in the Red River Basin in Oklahoma possibly originated from a release of baitfish.

Countries occurrence: Native:
United States

Additional data:

Range Map: Click here to open the map viewer and explore range.

Population [top]

Recently collected at 23 sites in Oklahoma, Texas, and New Mexico (USFWS, Federal Register, 3 August 1994).

The two occupied segments in the Canadian River and the segment in the Cimarron River represent the largest, and perhaps only, remaining viable aggregations of Arkansas River shiner (USFWS 2005). This does not include the introduced population in the Pecos River.

Total adult population size is unknown.

Population:

Distribution and abundance in large portions of native range are now much reduced. Within the last 35 years, this species has disappeared from over 80% of its historical range (USFWS 1998). Populations in the Canadian River upstream from Lake Meredith may be stable (rather than declining, as was suggested in the proposal to list this species as endangered) (USFWS 1997, 1998).

"The overall trend in the status of this species is characterized by dramatic declines in numbers and distribution despite the fact that this species evolved in rapidly fluctuating, harsh environments" (USFWS 2009). This does not include the introduced population in the Pecos River.

Current Population Trend: Decreasing

Additional data:

Habitat and Ecology [top]

Habitat and Ecology: Habitat includes turbid waters of broad, shallow, unshaded channels of creeks and small to large rivers, over mostly silt and shifting sand bottoms (Lee *et al*. 1980, Page and Burr 2011). This shiner tends to congregate on the downstream side of large transverse sand ridges. Spawning occurs in main stream channels. Eggs travel with current many miles downstream. Larvae seek backwater pools and side channels.

Systems: Freshwater

Movement patterns: Not a Migrant

Use and Trade [top]

Use and Trade: This species is not utilized.

Threats [top]

Major Threat(s): USFWS (2009) summarized threats as follows (slightly edited):

Reservoir construction is the most widespread cause of habitat loss. Reservoirs have inundated, dewatered, fragmented, or otherwise directly altered considerable sections of river habitat once inhabited by the species. Not only have reservoirs directly affected habitat immediately upstream of the dam, but downstream altered hydrologic regimes have also significantly reduced habitat (including encroachment of non-native salt cedar) and diminished the species' ability to successfully reproduce within certain reaches of the river. Water depletion and diversion continue to threaten the species, particularly in light of significant

reductions to the High Plains Aquifer and projected climate change. Approximately 97 percent of the water pumped from the High Plains Aquifer is used for irrigation, resulting in aquifer level declines in the parts aquifer (including drainages occupied by the ARS which overly the aquifer) of more than 150 feet since predevelopment (1950). Water depletion and diversion have affected the natural hydrologic regimes that the species requires for successful reproduction. Water depletion has had a detrimental effect on water quality by exacerbating existing water quality threats such as nutrient loading and increased chlorides. Channelization of the Arkansas River has permanently altered and eliminated suitable habitat and is largely responsible for the extirpation of the species within the Arkansas River in Arkansas and Oklahoma. Some agricultural practices, such as concentrated animal feeding operations, have contributed to water quality degradation in the Arkansas River basin impacting ARS aggregations. Such practices contribute excess nutrients, sediments, chemicals, and other types of non-point source pollutants, primarily due to runoff from range, pastureland, tilled fields, and feedlots. The Canadian and Cimarron rivers also traverse oil and gas producing areas and receive municipal sewage effluent and manufacturing return flows, all of which can degrade water quality.

Threats continue from streamflow depletion, water quality degradation, and streamflow alteration. Existing regulatory mechanisms either lack the capacity or have not been implemented adequately to decrease or remove these threats.

The occurrence of a single, catastrophic event, such as the introduction of competing species, a contaminant spill, or a prolonged period of low or no flow, would increase the likelihood of extinction. Arkansas River shiners are undoubtedly capable of recovering from drought, provided other factors have not irreparably degraded their habitat. The fragmentation and apparent isolation of self-sustaining populations renders the remaining populations vulnerable to any natural or manmade factors that might further reduce population size.

Competition with the introduced Red River shiner (*Notropis bairdi*) also may contribute to reduced population sizes (Bestgen *et al*. 1989; USFWS, Federal Register, 3 August 1994; USFWS 1998).

See USFWS (1998) for many further details.

Conservation Actions [top]

Conservation Actions: Better information is needed on current distribution (particularly in the Cimarron River) and life history. Implement research for a thorough habitat assessment of the species historic and current range for reintroduction within portions of its historic range. Management needs include restoration of flow regimes and salt cedar control on the Canadian and Cimarron rivers (USFWS 2009).

Classifications [top]

Habitats | Threats | Actions In Place | Actions Needed | Research Needed | Uses

5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)
suitability: Suitable **major importance:** Yes

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